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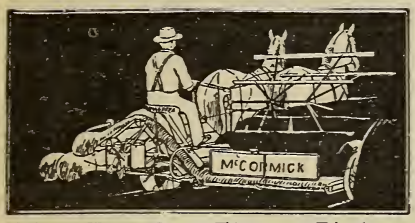

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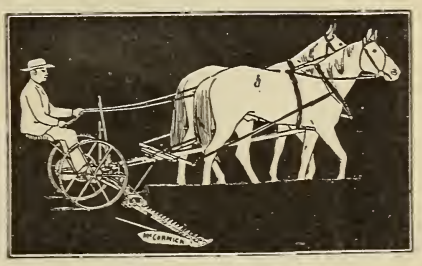
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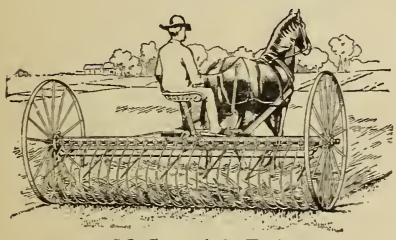
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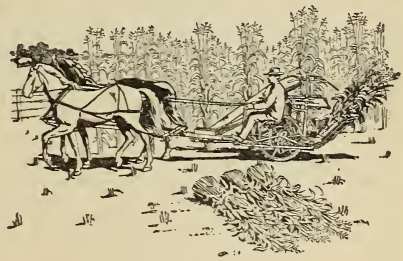
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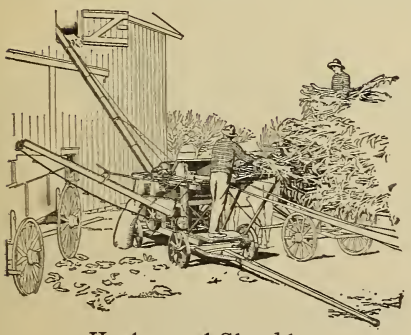
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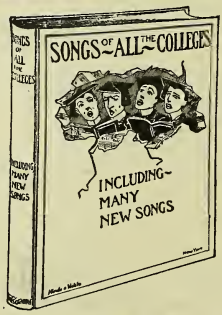

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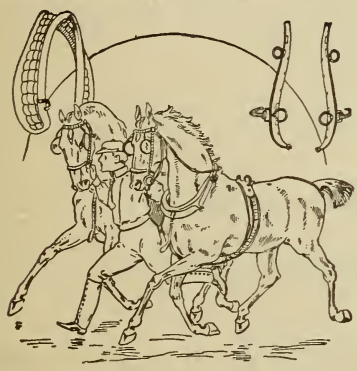

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The World's Work for February.

THE WORLD'S WORK for February publishes entire, for the first time in America, Rudyard Kipling's "The Islanders," which has raised a veritable furore of discussion in England. Frank Norris, the author of "The Octopus," in an article entitled "The Frontier gone at Last," shows how the Anglo-Saxons have at last encircled the globe with conquest. Captain Mahan adds to an interesting series of papers which have appeared in various publications, one in THE WORLD'S WORK on "The Growth of Our National Feelings." George Iles, author of "Flame, Electricity and the Camera," writes Marconi's triumph. An intimate view of Dr. Lyman Abbott is given by Hamilton Wright Mabie, Dr. Abbott's associate on *The Outlook*, and the striking career and personality of Tom Johnson is described with particular reference to his work as Mayor of Cleveland. A plea for better wages for teachers is made by William McAndrew, and the consolidation of American railroads is described, with a colored map for illustration, by M. G. Cunniff. Some striking pictures of California big trees are accompanied by text written by Richard T. Fisher. Among the other illustrated articles are a description of the wonderful *La P ensa* the Buenos Ayres philanthropic newspaper; a story by Arthur Goodrich of how the Connecticut farmers are growing tobacco under tents, and "Gaucho's Day's Work," by William Bulfin, who wrote "Tales of the Pampas. Helen Lukens Jones' description of the greatest olive ranch in the world in California; the exciting experiences of the party who carried the United States mail farthest north in Alaska, by Dr. Francis H. Gambell, and a story of how the ice, last year, blocked traffic on the Great Lakes until May. Hugh H. Lusk tells of an interesting experiment in New Zealand for the prevention of strikes. "The March of Events and Among the World Workers," run over their usual wide gamut of topics of contemporary interest.

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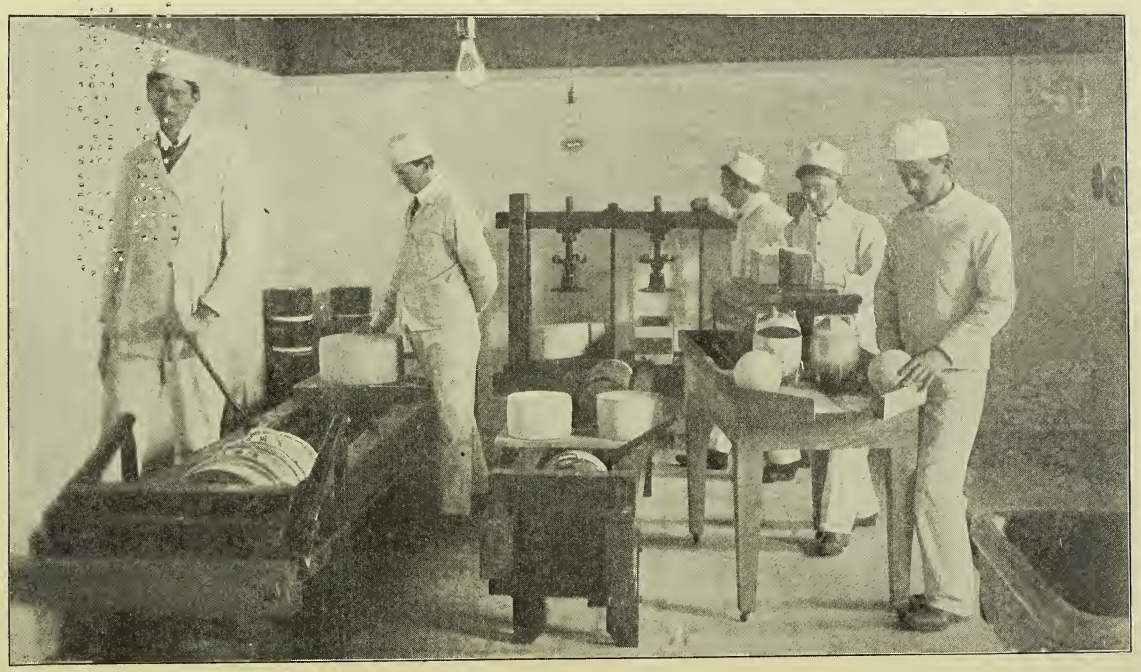

Dairy Students Pressing Cheese at the Ohio State University Dairy School.

THE AGRICULTURAL STUDENT.

VOL. VIII. OHIO STATE UNIVERSITY, COLUMBUS, FEBRUARY, 1902. No. 6.

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EDITORIAL CHAT.

With this issue a new editor assumes responsibilities on the STUDENT board. No boasts are made as to the future of the magazine, but it is hoped that with the hearty support of the agricultural student body and with the co-operation of those who may be associated in the work, the standard of the organ will be maintained, and that the efforts exerted in its behalf may be rewarded with some degree of success. To this end the friendly support of all students connected with the College of Agriculture is most earnestly solicited. Believing as we do in the undoubted good that each student may derive from devoting some time to work of this sort, all contributions to the pages of the magazine will be gladly received and will be given the most careful consideration. The AGRICULTURAL STUDENT is the student's magazine, and it is sincerely hoped that it may continue as such, always commanding their most hearty approval, and seeking to promote their best interests as related to agricultural education, both in the University and throughout the country.

In this issue we have thought it advisable to insert two or three extracts from the report of the Director of the Office of Experiment Stations. The report is an exceptionally gratifying one, showing a great advancement in the work of the experiment stations and in agricultural education in general, and is worthy of the most careful examination by every scientific agriculturist.

The corps of instructors secured for the summer school of Agriculture which list is printed elsewhere in this issue, is certainly a sufficient guarantee for the success of this, the initial session of a new departure in the progress of agricultural education—a graduate school of agriculture. The originators of the movement are men of experience in the field of agricultural education, and it is not to be presumed that they have gone into the work without due consideration of the possibilities and impossibilities in the matter. The arrangements for the work being now completed, it remains to be seen how many agricultural graduates will take advantage of this wonderful opportunity for learning and for becoming better acquainted with men and their methods. No such advantages have ever been known before and it is expected that a large number of persons from various parts of the country will appreciate the opportunities for education which will be offered.

The action of the United States Supreme Court in sustaining the decision of the Supreme Court of Ohio in the case of the Capital City Dairy Company, is a decided victory for the dairymen of the state. It is to be hoped that the Pure Food Commission will seize the advantage gained and enforce the law to the letter.

We are in receipt of the sixth volume of the Illinois Agriculturist. This journal is published annually by the Agricultural club of the University and is invariably made up of valuable contributions from the members of the club. This year's issue contains one hundred pages of reading matter besides several cuts, and is under the editorship of E. B. Forbes. The articles naturally pertain more particularly to Illinois crops and agricultural methods, and make up a very creditable and worthy publication.

We are in receipt of a recent report on Hereford cattle, issued by the Kansas State Board of Agriculture, in which the merits and history of this important breed as beef makers are very thoroughly treated. The report comes to us through the kindness of F. D. Coburn, secretary of the board, and is worthy of the careful perusal of every breeder of beef cattle throughout the country. The Hereford breeders have been making enviable records, and the high favor in which these cattle are held is admirably shown by the fact that Perfection, the first prize Herefore bull at the recent Chicago stock show, was sold at public auction, on January 7, to G. H. Hoxie, for the remarkable sum of nine thousand dollars. At the same time it was announced that Dale, the sire of Perfection, had been sold to Jesse Adams for ten thousand dollars, the highest price ever paid for a Hereford bull in the United States.

The STUDENT acknowledges the receipt of a fine sixty-inch pocket tape line, with the compliments of Clay, Robinson & Co., Union Stock Yards, Chicago.

Agricultural Students' Union.

The Eighth Annual Meeting of the Agricultural Students Union of Ohio was held in Townshend hall Thursday evening, January 16, 1902. The attendance was unusually large and the interest shown by all present was very gratifying to the promotors of the movement.

The address of the retiring president, Mr. Loring H. Goddard, was very interesting and contained a great many valuable suggestions as to the future work of the union. The association owes much to the energy and careful superintendence of Mr. Goddard during the past year, for he has proven himself a thoroughly competent and energetic director.

The object of the Students Agricultural Union is to encourage agricultural experimentation, especially among the graduates and ex-students of the University, to organize them into a body for systematic work, and to provide a means whereby they may be brought together in annual reunions, thus not only furthering the cause of agriculture throughout the state, but bringing the members of the organization into a closer relation both socially and scientifically. In these matters, it has in part succeeded; and although in some ways the work done has not been up to the expectations of the originators, yet on the whole it is showing decided progress.

The work is divided into various divisions under the superintendence of members of the union, appointed as directors, whose duty it is to keep in touch with the various experiments along the assigned line of work, to advise and suggest when necessary, and to collect the data obtained by the various investigators, embodying them into a report to be given at the annual meetings.

The reports of directors for the past year as received at the meeting were in some ways very gratifying, in spite of a very unfavorable season throughout almost the whole of the state. The reports of L. H. Goddard, of the agricultural division, and of A. D. Selby, of the division of economic botany were especially valuable. Conclusive results from various sources in experiments with wheat, formed a portion of the report of Mr. Goddard, while Mr. Selby reported among other things, the marked increase in the use of the formalin treatment for the prevention of oat smut throughout the state.

In regard to this latter subject, it may be said that this treatment has been found an almost absolute preventative of the oat smut, even in the most badly affected seed. Mr. Selby reports its use as having been increased fivefold through the efforts of the union.

Professor Decker reported satisfactory progress in the dairy division and outlined plans for the ensuing year which he is intending to follow. The work will consist principally in the gathering of data in regard to the dairy interests of the state, with especial reference to the number of cheese factories and creameries, and the amount of work that is being done. Considerable work was done along this line during the past year, and the coming year expects to see the work completed.

The report of the treasurer showed the organization to be in good financial condition. It might be mentioned that the money necessary for the success of the movement is appropriated partly by the University and in part by the experiment station. Director Thorne, of the station was present, and gave a very interesting and encouraging talk.

The spirit of the meeting was one of determination for the future success of

the movement, and valuable suggestions were made by various members present, in regard to work for the ensuing year. After the reports of the directors had been received and roundly discussed, Mr. M. F. Miller, recently of the United States Department of Agriculture, gave a short talk on the work of the Department with especial reference to the Bureau of Soils.

On the conclusion of the meeting, the following officers were elected for the ensuing year: President, A. D. Selby, Wooster, Ohio; vice president, M. F. Miller, Ohio State University; experimentalist, Clarence W. Waid, Ohio Experiment Station; secretary-treasurer, John W. Decker, Ohio State University. The following division directors were appointed: Agriculture, L. H. Goddard, Manora, Ohio; horticulture, V. H. Davis, Ohio State University; dairying, J. W. Decker, Ohio State University; apiculture, John F. Cunningham, Ohio Farmer office, Cleveland, Ohio; soils, M. F. Miller, Ohio State University; economic botany, A. D. Selby, Wooster, Ohio; forestry, E. J. Riggs, Wooster, Ohio.

The members are especially desirous of enlisting as many as possible in the work of the union, and to this end earnestly solicit the active support of every graduate and ex-student, or of others especially interested in the work of the agricultural college of the University. It is urged that everyone send reports of any experiment which shall be made, whether in connection with this work or incidentally, to the proper division director, to be inculcated in his report for the year. If each one should heed this suggestion, the experiments of one would benefit all, and we should be doing a work that would mean more than a mere sordid gain to the individual. For any desired information, for seeds, or other supplies, address the proper director, or the experimentalist, and you will receive prompt attention.

At the close of the recent meeting a motion to hold a reunion of the agricultural graduates and ex-students of the University the coming year was submitted to the executive committee. This meeting will undoubtedly be held at the time of the regular meeting next year, and it is hoped that every former member of the Agricultural department will make plans to be in Columbus at that time. The committee in charge hopes to have plans completed soon for one of the most enjoyable affairs ever held in connection with the College of Agriculture of the University.

State Board of Agriculture.

The annual meeting of the Ohio State Board of Agriculture was held in the Capitol building in Columbus on Thursday, January 16, and as usual, consisted of three sessions—morning, afternoon and evening. The morning session was addressed by Governor Nash and by J. S. Stuckey, president of the Board, both addresses being of great interest and value. The remainder of the session was devoted to the hearing of committee reports and other business.

The afternoon session opened with an address by Director Thorne, of the Experiment Station on "The First Century of Ohio Agriculture." He traced the various lines of agricultural work in their progress throughout the century, and drew some most valuable conclusions. The address was a masterful one and was especially valuable because of Director Thorne's long connection with the agricultural interests of the state.

The second address was by L. H. Kerrick, of Bloomington, Illinois, on "Beef Production." Mr. Kerrick's reputation as a breeder always insures him

an appreciative audience, and the address was a most valuable one, treating especially the production of beef cattle to be marketed young. The third address, by Valency E. Fuller, editor of the Jersey Advocate and Dairymen, of New York, on "Some Essential Elements in the Breeding of the Dairy Cow," was well rendered and to the point. Mr. Fuller's long experience with Jerseys makes him well qualified for the presentation of the principles necessary to the success in producing dairy animals.

The concluding address was by Assistant Secretary Brigham, on "Foreign Markets," who spoke in his usual forcible manner, giving in considerable detail the status of our foreign markets, and the possibilities for the future.

The evening session was devoted to miscellaneous business and to the election of members of the board. Two new members were elected: Chas. H. Ganson, of Champaign county, and A. P. Sandles, of Putnam county.

State Farmers' Institute.

The annual Farmers' Institute of the State was held in the Capitol building in Columbus, January 14 and 15, and was largely attended by representative farmers from all parts of Ohio. The program was of unusual interest and the talent displayed was the best in the State. The following is a list of the principle addresses: "The Advantages of Farm Life," E. Trumbo; "The Future of the Dairy Business in Ohio," Prof. J. W. Decker; "Growing and Marketing Potatoes," G. C. Housekeeper; "Some Comparisons," F. A. Derthick; "Does the Farm Boy Need a College Education?" T. J. Miller; "The Want of Prolificacy in the Pure Bred Hog, It's Cause and Cure," Dr. F. B. McNeal; "Country Roads," O. B. Thompson; "The Formation of Animals Dictates Their Purpose," S. H. Todd; "The Up-to-date Stock Farm," O. E. Bradfute; "Reciprocity as it Affects the Wool Grower," Col. J. H. Brigham; "The Science of Twentieth Century Corn and Wheat Culture," Geo. E. Scott; "Some Points in the Selection of a Modern Dairy Cow," Valency E. Fuller; "The Horticulture of Ohio," W. W. Farnsworth.

The subjects relating to livestock and their products were probably of most importance on the whole, and were ably discussed, several being worthy of especial mention, particularly that of Assistant Secretary Brigham on "Reciprocity as it Affects the Wool Grower."

Music for the occasion was furnished by the Otterbein Male quartette, which added much to the pleasure of the occasion.

There are few gatherings more representative of the active agriculturists of the state than these institutes, and the numerous other meetings and associations which convene at this time, should make it very necessary for every wide-awake farmer to be in the Capital City at this time of the year.

Ohio Veterinary Association.

The Ohio Veterinary Association held its nineteenth annual session Tuesday and Wednesday, January 14 and 15, at Townshend hall. The program consisted of papers by several members of the association, and Tuesday was devoted to clinical work with operations and demonstrations. There were quite a number of the members present, but still not as many as there should have been, as the meetings are beneficial not only to the practitioner, but to all concerned. The meeting was called to order by Dr. Meyers, of Wilmington, and Dr. W. O. Thompson delivered the address of wel-

come. In this address he not only welcomed the visitors from various parts of the state to the O. S. U., but surely made them feel quite at home to anything beneficial or that might aid them in helping the progress of veterinary science. He called the attention of the association to the opportunities offered here to the young man inclined toward a veterinary education, and also to the improvements we are promised, making this the best college of the kind in the state.

In response to this, Dr. Newton, of Toledo, gave a very interesting talk, showing the progress of veterinary science in the last twenty years and what we are to expect the next few years. Following this came the secretaries' report with applications from fifteen new men for membership, which shows that the meetings are being appreciated more and more. The paper by Dr. Anderson on "Skin Diseases," was very interesting, and sighted cases with all the various stages, with treatment and results from the same. Pneumonia and its treatment was very ably discussed by Dr. Fair and provoked some discussion on the part of the members. Dr. Burneson, of the Experiment Station, of Wooster, gave his report on tuberculosis, its prevalence, percentage affected, etc. It seems to be very common all over the state, and with what he has tested, nearly 15 per cent. of all milch cows are affected. Other papers were read with equally interesting reports, and the clinic was next in importance.

Dr. Torrence, of Cleveland, performed neurectomy, but not making as good time as at the American Association, when it took him less than one minute to operate both legs. Dr. Shaw, of Dayton, performed laryngotomy for roaring. Dr. Meyers gave demonstrations in hobbling, and others assisted in the clinic, doing equally well. The next meeting will be held at Toledo. C. H. S.

Ohio Horse Breeders' Association.

The annual meeting of the Ohio Horse Breeders' Association was held at Townshend hall Tuesday evening, January 14.

The meeting was called to order by Vice President Jones, the president being absent, who, after a few remarks, introduced Col. Crawford, of Newark, who read a paper on "Horse Breeding in North America and in the Old World.

In brief, he stated: This subject should be talked of by the practical farmer, who should be well posted, and if he expects to improve the horse, must treat on facts only. For a long time the price of horses was such that the farmer could not afford to raise them and put them on the market, but the advance in prices in the last few years has again stimulated the breeding of horses by the practical farmer.

Horse breeding in the old world is carried on in very much the same way that it is here, but for several reasons is much more successful. Among these reasons are the following: The countries are all small, and there are but few breeds from which to select, while they are also kept pure. Again, the governments of the European countries offer some sort of inducements to the bettering of their horse breeds, which is a good point lacking in the American breeder. In France each horse kept for breeding purposes must be presented for examination by the government officials and if found sound is branded on the neck; if found unsound, he is not branded at all, and a good many of these that are rejected find their way to America, and always have the longest pedigree.

Col. Crawford described an ideal draft horse as follows: "He should have good, round feet, well hollowed out, short legs and strong, heavy bones below the knee. A horse which is weak

below the knee and too straight on the pastern is not of value as a stallion. He must have large, full breast, with full shoulder, and a good place to set a collar, high in the withers, head and ears in proportion to the rest of the body, full, large eyes, short back, long, round ribs, good broad loin, long broad hips, and in all cases he must have good, full stifle running well down. He must weigh from 1900 to 2200."

"The breeds coming nearest the ideal are the Belgian, Percheron and French draft."

This paper was followed by quite a lively discussion, which gave all the more interest to the meeting.

During the discussion two students, E. L. Shaw and H. G. Beale, were called upon to give an exhibition judging contest, using the score card used by the Department of Agriculture of the University. The horses used belonged to the Davidson Transfer Co., and were of the Percheron type.

When the young men had finished scoring, Mr. Beale went over the score card, explaining and giving reasons for placing the animals as he had done.

H. G. B.

The legislature of Texas, at its last meeting, appropriated $10,000 for a new experiment station which will probably be located in either Smith or Henderson county (East Texas.) A new station has also been established at Spencer, Indiana, which is to be maintained by the publication known as The Agricultural Epitomist. The farm consists of 590 acres, and includes a variety of soils, furnishing an opportunity for experimenting in drainage and irrigation. While it is presumed that the farm will be operated upon a commercial basis to a certain extent, yet the effort of those having it in charge will be "to help and improve agriculture in all its branches."

The Dairy School.

The special dairy class at O. S. U. numbers forty. Over fifty were registered, but a number withdrew at the last moment on account of unforseen obstacles which prevented them attending this year. Four of these are registered for the class of 1903. The present class has settled down to business. C. N. Breese, Clifford Tarpning, E. F. Mangold and Frank Hudson are serving as advanced student assistants. T. L. Wheeler is assisting with the work in the engine and bottling rooms.

The Ohio Dairymen's Convention will be held in Townshend Hall, February 5, 6 and 7. A great deal of interest is being shown by the dairymen of the state in the work of the association, and the convention promises to outstrip all previous ones. A prize of a library of dairy books is offered for the creamery or cheese factory sending the largest percentage of its patrons to the convention, and it is expected that there will be a lively contest.

The students of the Ohio Dairy school will hold a reunion at that time and lend their enthusiasm to make it a lively meeting.

Charles R. Oliver, of the class of 1900, who has been operating French Brothers' skimming station at Waynesville, Ohio, has accepted a position as butter maker at Oscola, Indiana.

B. V. Lemur, a Columbus milk dealer, is taking advantage of the dairy school, which is located so near him, and has entered the class of 1902.

Prof. H. J. Noyes, who formerly had charge of the dairy work at O. S. U., will be one of the prominent speakers at the Dairymen's convention in February. He is the owner of a line of cheese factories in southwestern Wisconsin and a heavy buyer of cheese. He will also judge the cheese at the convention.

The dairy school at the University of Wisconsin, located at Madison, has a class of 130 students. Last week they went in a body to the Wisconsin Cheese Makers' Convention, which was held in Milwaukee.

The California Dairy school, located at Berkeley, has closed a very successful term's work. There were thirty-seven members in the class, and the class yell was as follows:

Whole milk, skim milk, buttermilk, cream,
With bacteriological phenomena teem.
Strepto-coccus hollandicus—keep 'em on the run,
U. C. Dairy boys of nineteen one.

They held a closing banquet, the sentiment of the toasts being in the following lines:

We have heard in mournful numbers,
Of the misery and woe,
Of the man who never slumbers,
Or the man behind the hoe.

But ye poets old and hoary,
Who with poetic ardor burn,
There's another, newer story;
'Tis the man behind the churn.

The Grout Bill.

The contest over the Grout Bill in the House Committee on Agriculture has been most fiercely waged. As the bill was finally reported however, the provisions of the bill remain intact, the tax of 10 cents per pound on oleomargarine made in imitation of butter and that of one-fourth of a cent per pound on the uncolored product, both being retained. The latter tax, which it for a time seemed would be omitted, is very useful in throwing the burden of the necessary supervision upon the proper shoulders—a very important item in this connection. In the course of the proceedings before the committee, it was determined that a means had been devised whereby it was possible for manufacturers or others to color the oleo after it had been manufactured. Therefore, in order to foil such attempts a clause was inserted in the bill defining a manufacturer as follows: Any person that sells, vends or furnishes oleomargarine for the use and consumption of others, except to his family and guests thereof, without compensation, who shall add to, or mix with such oleomargarine any ingredient or coloration that causes it to look like butter, shall also be held to be a manufacturer of oleomargarine, within the meaning of said act and subject to the provisions thereof."

Another clause was also added referring to the books of dealers and reads as follows: "That wholesale dealers in oleomargarine shall keep such books and render such returns in relation thereto as the commissioner of internal revenue, with the approval of the Secretary of the Treasury, may, by regulation, require, and such books shall be open at all times to the inspection of any internal revenue officer or agent. And any person who wilfully violates any of the provisions of this section shall for each offense, be fined not less than $50 and not exceeding $500, and imprisoned not less than thirty days nor more than six months."

The bill as ordered reported by the committee is that introduced by Mr.

Henry, of Connecticut, which was verbatim the Grout Bill, excepting that before the word "butter," he inserted the word "yellow" in the clause referring to the tax. This change was deemed unwise by the committee and as reported it was omitted. The bill should not be referred to as a "substitute" for the Grout Bill since it is really the Grout Bill, with two sections added to meet the new conditions.

The above rendering of the measure seems to be favorable to the dairy interests of the country and affairs point toward a favorable outcome. However, the contest must still be waged with untiring energy to secure the desired result, as the measure will be most bitterly fought to the end.

Agricultural College Appropriations.

In providing for maintenance and new buildings at the agricultural colleges, the various state legislatures meeting during the past year have been more than usually liberal. At the last session of the Kansas legislature over $200,000 was appropriated to the state agricultural college for new buildings and other improvements and maintenance. Of this sum, $70,000 will be expended in the erection of a new physics and chemistry building, and $10,000 for additions to the library. The appropriations of the Minnesota legislature for its college of agriculture aggregate this year over $90,000, of which $25,000 will be used for a new chemical building, $25,000 for additions to the women's dormitory, and $7500 for instruction and experiments in curing meat. Colorado has provided $40,000 for the erection of a new irrigation engineering building. The Michigan agricultural college has recently completed a women's building, costing $95,000, a dairy building costing $15,000, a barn costing $4000 and the state legislature, at its last session, provided for an annual levy of one-tenth mill on the taxable property of the state, which will yield $100,000 per annum for the support of the agricultural college, experiment station, substations and farmers' institutes. In North Dakota a levy of one-fifth mill on the taxable property of the state will provide additional funds for the maintenance of the agricultural college. A special appropriation of $50,000 for buildings has also been made by the legislature. The College of Agriture of the University of California has at its disposal, $250,000 per annum for two years. The legislature of Indiana has provided $60,000 for a new agricultural building at Purdue University, and $10,000 a year for two years for maintenance and equipment of the same. The College of Agriculture and Mechanic Arts of the University of Missouri has been provided by the Missouri legislature with $40,000 for a dairy and livestock building, $40,000 for a horticultural building and equipment, and other minor appropriations, making a total of over $100,000 for the agricultural work of the University. At the New Hampshire College of Agriculture and Mechanic Arts, $30,000 provided by the legislature will be expended in the erection of an agricultural building. The Oklahoma assembly has levied taxes to raise $46,000 for the construction of an engineering building and for additions to the library at the Oklahoma Agricultural and Mechanical College. Washington Agricultural College has an appropriation this year of nearly $120,000; $25,000 for a chemical building, $10,000 for an armory, nearly $25,000 for other improvements, and $60,000 for maintenance. The South Dakota Agricultural College has an appropriation of $40,000 for an engineering and physics building and $10,000 for a building for work in plant breeding. The University of Ida-

ho has received $50,000 for a science hall and girls' dormitory. In Wyoming the legislature gave the State University $36,000 for a science building. This institution is also receiving $15,000 a year from the rent of its lands. In Montana a fund of $16,000 has accumulated from the rent of lands belonging to the agricultural college.—From the report of the director of the Office of Experiment Stations for 1901.

Shorthorn Cattle.

BY T. L. WHEELER.

Shorthorn cattle have been the most popular breed of cattle in the world during the whole of the present century, and are found in almost all parts of the civilized world. Yet the origin of this breed of cattle is rather obscure. It derives the name of Shorthorn from the shortness of the horns which is a leading characteristic of the breed, although they are also simetimes hornless.

Shorthorns were originally a British breed of cattle, where they first inhabited the counties of Northumberland, Durham, York and Lincoln on the northeastern coast of England, and country immediately in the vicinity of the river Tees. These were a comparatively large type of cattle and were the ancestors of our modern Shorthorns.

There were two independant strains—the Teeswater and Holderness; but these have become blended together by the crossing of their descendants. The conjecture is ,that improvement was begun by breeders early after the year 1700. Among the earliest breeders are: the Percys, Smithson, Aislabries, Blackets, Milbank, and many others.

About the year 1750 records began to be kept of the lineage of the breeds of cattle, and from 1730 to 1780 many eminent breeders are known. Their names and the pedigrees of their cattle are recorded in the first volume of the English Herd Book, first published in 1822.

About 1780 Robert and Charles Colling began breeding Shorthorn cattle, and were the chief and real improvers of Shorthorns.

The first importations into America were between 1783 and 1795 by Messrs. Goff and Miller, of Virginia.

There is close relationship between Shorthorns and Polled Durhams. The latter having originated from the former. There are two varieties of Polled Durhams, one of pure Shorthorn descent, and the other tracing to the native muley cows of the country crossed originally with registered Shorthorn bulls. The characteristics are the same as those of the Shorthorns, except that they are hornless.

Shorthorns are a dual purpose breed; i. e., they may be bred either for milk or beef, as they have great inherent capabilities in either direction. The records of various state fairs and agricultural colleges as well as private dairies prove their value as a dairy animal if necessary pains are taken to cultivate them in that direction, and as to their value as beef animals they are well known to be of the first class.

They possess remarkable powers of adaptation to the varying conditions of life, as changes of soil and food products and climatic conditions. They are best adapted to the temperate zone in level or gently undulating, arable countries. As they are of large size, they are less active as foragers, and when being grazed, the pastures should furnish them with plentiful supplies.

They are best adapted for feeding as they stand forcing well and lay on flesh evenly and deeply. As they mature early, under proper conditions, they fill the

demands of those who do not wish to feed for any length of time.

To anyone who has made a study of the different breeds of cattle, it will be readily seen why Shorthorns have been and are so popular. To sum up, it is a good dual purpose breed and that is what is wanted by the average farmer.

The Progress of Agricultural Education.

The progress of agricultural education during the last decade is one of the most encouraging features connected with the development of the country. There can be no more permanent good bestowed upon a nation than that of educating the agricultural classes. An enlightened and progressive farming class in a country with such agricultural possibilities as our own is the surest criterion of a powerful nation and a contented people; and the great advancement that has been made within the last few years in the methods of educating the agricultural masses, promises well for the future. A noted feature of this advancement is the introduction of agricultural instruction into secondary and rural schools in many cases, the encouragement of nature study in various primary schools throughout the country, and the extension of correspondence schools for agricultural education among the farmers. All these speak of a wonderful awakening to the needs of the people and point to an immediate and lasting benefit to be derived, not alone by the agricultural masses, but by the nation. Regarding this outgrowth of feeling and the development which is taking place we could do no better than notice a few paragraphs from the report of the Directors of the Office of Experiment Stations, U. S. Department of Agriculture, for the past year. He writes as follows: "A much larger amount of college extension work in agriculture is now being done than ever before. In the states in which the work has been in progress for a number of years it is being continued, and many institutions in other states are following the example of the pioneers in this line of education. This work is also assuming a considerable variety of forms. The following are some recent examples of this tendency:

The Alabama Polytechnic Institute has begun the publication of short articles in local newspapers. The agricultural department of the State Agricultural College of Colorado has begun the publication of "Agricola Aridus," a bimonthly magazine for college-extension work; also of press bulletins. The faculty and staff of the Delaware college and station have begun giving nature-study lectures. The school of Agriculture of the Nevada State University has begun the publication of nature-study leaflets. The Rhode Island College of Agriculture and Mechanic Arts makes exhibits at county fairs, furnishes notes on the station for agricultural papers, sends members of its staff to visit prominent farmers, has inaugurated correspondence courses, and begun the introduction of nature study in rural schools.

The State Agricultural and Mechanical College of the University of Tennessee has prepared a permanent exhibit for sending to meetings of farmers to illustrate the work of the station. The The State Agricultural and Mechanical College of Texas has begun the publication of press bulletins and notes. The faculty of the West Virginia University have undertaken nature-study work. The North Dakota Agricultural College and Experiment Station have prepared

TEN AGENCIES FOR FURTHERING THE PROGRESS OF AGRICULTURAL EDUCATION AS OUTLINED DR. A. C. TRUE.

Research and Administration—

1. U. S. Department of Agriculture.
2. State Boards of Agriculture.
3. Experiment Stations.

Education of Youth—

4. Colleges of Agriculture.
5. Secondary schools.
6. Common schools.

Education of Adults—

7. Farmers' Institutes.
8. Agricultural Societies.
9. The Press.
10. Books.

instructive exhibits for fairs in the state and also a number of permanent exhibits to be displayed in public places. Through the efforts of this college nature study is now being taught in all the training schools for teachers, and all high schools of the state will offer courses in agriculture." * * * *

"One of the most hopeful signs to those interested in agricultural education is the effort on the part of faculties of agricultural colleges and of others charged with the education of our youth toward the development and support of secondary agricultural schools and the introduction of nature study and elementary agriculture into the rural schools. Alabama continues to support nine congressional district agricultural high schools which annually accommodate about 2000 pupils at a cost to the state of $22,500. Minnesota has for a number of years supported a successful secondary school of agriculture in connection with the State University, and the legislature of 1901 appropriated $2000 a year for two years for the introduction of agriculture into the rural schools. The University of Nebraska has recently inaugurated a similar school of agriculture with a three year course. A recent law in Wisconsin provides for the establishment of county agricultural high schools. In Missouri increased attention is being given to carrying out the provisions of the law requiring agricultural instruction in rural schools, and to prepare teachers for this work, departments of agriculture have been established in the three normal schools of the state, located at Cape Girardeau, Kirksville and Warrensburg.

Through the efforts of the committee for the promotion of agriculture in New York a school of practical agriculture and horticulture has been put into successful operation at Briar Cliff, Manor, N. Y.

In many states the problem of improving the rural schools is causing general discussion, and there seems to be a marked tendency toward concentration, that is, the elimination of small schools and the establishment of centralized schools, often with free transportation for pupils living at a distance from the school house. This movement has in several cases resulted in the establishment of rural high schools, with the township or the county as a unit. Reports coming from sections where centralization has been tried show for these schools better supervision, better teaching, better buildings, and other facilities for instruction, better health and morals on the part of the pupils, more regular attendance, a longer continuance of the large boys and girls in school and considerably enriched courses of study. These courses of study at the present time are in the formative state; they are merely outlined, or, at most, in the first years of experimental development. Means for improving them are eagerly sought and thoughtful suggestions receive careful consideration.

The time seems favorable therefore, for the Department to take a more active part in encouraging the introduction of nature study and elementary agriculture into the curricula of rural schools, with the idea of developing the natural tendencies of the pupils to observe and take an interest in the natural phenomena surrounding them, and of fostering in them a love for the country and its pursuits. Such encouragement may be given by co-operating with the departments of education in the publication and distribution of suggestive courses of study and of a bibliography of works that would be helpful to teachers, by distributing seeds and plants for use in establishing school gardens, by furnishing chools with collections of specimens of beneficial and injurious insects, plant diseases and other illustrative material, by supplying teachers with the publications of this Department which would be useful to them, and by such other means as would suggest themselves as the work progressed. The Department might also do much to promote the great movement for the betterment of country life by timely articles on this subject in its Year Book and other popular publications."

The Summer School of Agriculture.

The arrangements for the summer school of Agriculture at the University have been completed, and the prospectus for the session is now in the hands of the printer. The length of the session will be four weeks, from July 7 to August 1, 1902. The school day will consist of three two-hour periods, 8 to 10 and 10 to 12 A. M. and 2 to 4 P. M. Facilities for registration will be provided on Saturday, July 5, and the exercises of the school will begin at 8 A. M., Monday, July 7.

Only persons who have completed the college course and taken a bachelor's degree will be admitted to the privileges of the school, except that admission may be granted to non-graduates who are recommended by the faculties of the colleges with which they are associated as persons properly qualified to profit by advanced instruction in agriculture.

Instruction will be given in three main lines—agronomy, zootechmy and dairying, with a special course in plant and animal breeding. The men who will conduct the work along these various

lines are the best that could be secured as will appear from the following list of faculty members and instructors:

FACULTY.

William Oxley Thompson, D. D., LL.D., President; Alfred Charles True, Ph. D., Dean; Thomas Forsyth Hunt, M. S., Registrar.

INSTRUCTORS IN AGRONOMY.

CLIMATOLOGY (Air and Soil). Prof. F. H. King, Chief of Division of Soil Management, Bureau of Soils, U. S. Department of Agriculture.

SOILS.

Prof. Milton Whitney, Chief of Bureau of Soils, U. S. Department of Agriculture; Lyman J. Briggs, Ph. D., Soil Physicist, Bureau of Soils, U. S. Department of Agriculture; W. D. Gibbs, M. S., Professor of Agriculture, New Hampshire State College, Director and Agriculturist of the New Hampshire Agricultural Experiment Station.

FERTILIZERS.

E. B. Voorhees, D. S., Professor of Agriculture, New Jersey State College for the Benefit of Agriculture and the Mechanical Arts, and Director of the New Jersey Agricultural Experiment Stations; H. J. Wheeler, Ph. D., Professor of Geology, Rhode Island College of Agriculture and Mechanic Arts, Director and Chemist of Rhode Island Experiment Station.

PRINCIPLES OF PLANT PRODUCTION.

MAIZE.

Cyril G. Hopkins, Ph. D., Professor of Agriculture in College of Agriculture of University of Illinois, Agronomist and Chemist at Illinois Agricultural Experiment Station.

COTTON.

John F. Duggar, M. S., Professor of Agriculture, Alabama Polytechnic Institute, and agriculturist of the Alabama Agricultural Experiment Station.

NUTRITION OF ANIMALS.

H. P. Armsby, Ph. D., Instructor in Zootechny, Pennsylvania State College and director of Pennsylvania Agricultural Experiment Station; W. H. Jordan, D. S., director of New York State Agricultural Experiment Station.

ANIMAL PRODUCTION AND CONFORMATION.

Beef Cattle.—C. F. Curtiss, M. S., Agr., Professor of Agriculture, Iowa State College of Agriculture and Mechanic Arts, and Director of Iowa Agricultural Experiment Station; H. J. Waters, B. S. A., Dean of the College of Agriculture and Mechanic Arts of the University of Missouri, and Director of the Missouri Agricultural Experiment Station.

Dairy Cattle.—M. A. Scovell, M. M., Director and Chemist of Kentucky Agricultural Experiment Station; T. S. Haecker, Professor of Dairy Husbandry, College of Agriculture of the University of Minnesota.

Horses.—Thomas F. Hunt, M. S., Dean and Professor of Agriculture of the College of Agriculture of Ohio State University.

Sheep and Swine.—John A. Craig, B. S. A., Editor of Iowa Homestead, former Professor of Animal Husbandry, Iowa State College of Agriculture and Mechanic Arts.

INSTRUCTORS IN DAIRYING.

THE CHEMISTRY AND BACTERIOLOGY OF DAIRYING.

S. M. Babcock, Ph. D., Assistant Director and Chief Chemist of the Wisconsin Agricultural Experiment Station; H. W. Conn, Ph. D., Professor of Biology, Wesleyan University, and Bacteriologist of the Storr's (Connecticut) Agricultural Experiment Station.

PRINCIPLES OF CHEESE MAKING.

S. S. Van Slyke, Ph. D., Chemist of the N. Y. State Agricultural Experiment Station.

METHODS OF BUTTER AND CHEESE MAKING.

H. H. Wing, M. S., Assistant Professor of Animal Industry and Dairy Husbandry, Cornell University and Agricultural Experiment Station; C. D. Smith, M. S., Superintendent of Farmers' Institutes and Dean of the Special Courses, Michigan Agricultural College, Director of Michigan Agricultural Experiment Station; G. L. McKay, Instructor in Dairying and Cheese Making, Iowa State College of Agriculture and Mechanic Arts, and Agricultural Experiment Station; J. W. Decker, B. Agr., Professor of Dairying, Ohio State University.

INSTRUCTION AND RESEARCH IN DAIRYING IN FOREIGN COUNTRIES.

E. W. Allen, Ph. D., Assistant Director, Office of Experiment Stations, U. S. Department of Agriculture; George A. Smith, Dairy Expert of N. Y. State Experiment Station.

COMMERCIAL ASPECTS OF DAIRYING.

H. E. Alford, C. E., Chief of Dairy Division, Bureau of Animal Industry, U. S. Department of Agriculture.

INSTRUCTORS IN PLANT AND ANIMAL BREEDING.

L. H. Bailey, M. S., Professor of Horticulture, Cornell University, and Horticulturist of Cornell Agricultural Experiment Station; Eugene Davenport, M. Agr., Dean and Professor of Animal Husbandry, College of Agriculture of the University of Illinois, and Director of the Illinois Agricultural Experiment Station.

METHODS OF INSTRUCTION AND INVESTIGATION.

Breeding of Plants.—H. J. Webber, in charge of Laboratory of Plant Breeding, Bureau of Animal Industry, U. S. Department of Agriculture; W. M. Hays, M. S., Professor of Agriculture, College of Agriculture of the University of Minnesota, and Agriculturist of the Minnesota Agricultural Experiment Station.

Breeding of Animals.—C. S. Plumb, B. S., Professor of Animal Industry and Dairying, Purdue University, and Director of the Indiana Agricultural Experiment Station.

The Growing Importance of Irrigation.

It is becoming more and more apparent that irrigation is destined to have a larger place in the agriculture of the humid portion of the United States than a few years ago was thought possible. It is already employed as a means of insurance wherever intensive cultivation is resorted to. Market gardeners in New Jersey, in the vicinity of Boston and around nearly all the large cities of the country are coming more and more to understand the security and profit which it brings. The rapid extension of rice irrigation in the south promises to inflence the utilization of water in the growing of other products in that region wherever a supply can be obtained at a reasonable cost. The development of the arid region by irrigation is destined in the future to cease to be a matter of local interest, and to occupy a leading place in national affairs. This is due to the fact that the vacant fertile lands of the inland states have now been taken up. We must look elsewhere to meet the demands of development, and it is the irrigated lands of the arid region which must replace the farms rendered unproductive by erosin and impoverished by wasteful and exhaustive methods of culture. To meet the growing home demand and to satisfy our expanding

foreign trade will tax not only the utmost resources of the humid states, but the productive resources of the arid region as well.

On the solution of the problems now being studied in this investigation must rest the laws which will govern the ultimate development of the large areas of public land yet awaiting settlement and reclamation. Its work is as important to the nation in aiding it to determine what it ought to do, as in assisting the arid states in solving the problems which press for an immediate answer.

The fact must not be lost sight of that in the arid region agricultural values inhere in water rather than in land. In many sections of the west the right to water which irrigates an acre of land is already worth far more than the land itself, and the methods by which titles to streams are acquired and the character of the ownership established, has as direct a relation to the development of the West as the methods employed in the disposal of public land. It is just as necessary, too, for the peace and prosperity of that region to keep streams from being acquired by speculative owners as it is to keep the land from being disposed of to speculative holders. In some cases extravagant and unjust grants of water have led to serious abuses, and it is only through a general education of the people most concerned that the expulsion of these abuses and the establishment of correct methods can be secured. The great work of this investigation is to promote the evolution of irrigation laws and customs suited to the needs of the different sections of the arid region and necessary for the protection of the individual farmer. As irrigation has extended and streams become more fully utilized it has become increasingly apparent that water laws are fully as important as land laws, and that it is not only necessary to define clearly the rights of each of the multitude of users from a common supply, but to provide adequately for the protection of these rights under some sort of public supervision, so that the peaceful and orderly division of rivers among farmers shall not only be possible but assured. It is also indispensible that there shall be men especially trained for this work. Under the most favorable conditions the harmonious division of a river is a complex and difficult performance. It involves the regulation of rights on tributaries so as to protect the rights on the main stream and a consideration of the needs of the farmer whose land lies scores or even hundreds of miles away from the snows which must moisten it in order that he may not be robbed by the farmer whose ditch or canal taps the water supply at the mountain's base. It involves the adjustment of diverse and conflicting interests of individuals, communities and sometimes of different states. Because the whole subject is new, development has outgrown organization. We have built ditches and dried up streams faster than we have evolved laws and customs for the protection of the users of their waters. The beginning of this investigation was the beginning of a disinterested and scientific study of these questions. Thevalue of these labors is now becoming manifest in all of the different states of the arid region. It has stimulated the movement for better laws and in many cases has resulted in a reform in methods that has increased yields and extended the area cultivated.

With these changes there has come a demand for information and advice wholly beyond our means to supply. We are now confronted by two needs—increased means for more comprehensive study of facts, and a larger force of trained and capable men to assume the important responsibility of directing the gathering of these facts and the interpretation of their significance when secured. —From report of the director of the office of Experiment Stations, U. S. Department of Agriculture.

The Imported Percheron Stallion Favori (48391) 28177.

The Imported Percheron Stallion Favori (48391) 18177.

Black, foaled April 15, 1896. Sired by Sangrado (22990), dam Christine (39377), by Picador II (5606), 2d dam Melie (26650), by Favori (7332).

Favori was approved by the French Government to stand for public service in France. As an inducement to the noted breeder, M. Edmond Perriot, the French Government granted him a large pension or subsidy in order to induce him to keep this great stallion in France for the improvement of the breed of Percheron horses there.

Favori was imported from France in December, 1901, by McLaughlin Brothers of Columbus, Ohio, with 120 others, and the week after his arrival he weighed fifty pounds more than a ton. He is, therefore, one of the largest horses of this famous breed. With this immense size he possesses in the highest degree the extraordinary quality and the high finish that is ordinarily supposed to belong to horses of very much smaller size.

The breeders of America are indeed fortunate to secure the services of this great horse that is of such extraordinary quality that any breeder in France would be proud to place him at the head of their stud of pure-bred mares.

The State Farmers' Institute and other meetings brought the usual number of former University students back to the city. Among those who visited the University were: John F. Cunningham, C. B. Steward, A. W. Nettleton, W. G. Byers and F. P. Stump.

Homer C. Price, O. S. U., '98, Professor of Horticulture in the Iowa Agricultural college, visited the University recently. The new equipment which the University is installing in the Department of Horticulture speaks well for the interests with which he is connected.

Professor Hunt spent Wednesday, January 15, in Washington, consulting with Dr. True in regard to the work of the summer school of Agriculture at the University.

He spent Thursday in Trenton, N. J., where he delivered an address at the annual meeting of the State Board of Agriculture of that State, on "The Relation of the Livestock Industry to New Jersey." He returned to Columbus on Friday.

The soil of physics laboratory has just received a new centrifugal apparatus for the mechanical analysis of soils. This method is a decided improvement over that of gravity separation and allows a great saving of time. The apparatus is the same as that used in the Bureau of Soils ,U. S. Department of Agriculture, and was secured through Dr. Lyman J. Briggs, Assistant Chief of the Bureau.

Agricultural College News.

A new laboratory building for the department of horticulture at the Iowa college is soon to be built. It is to be one of the most complete of its kind in the country.

In connection with its short courses this winter, the Kansas Agricultural College will offer a course in practical poultry management to be given in February.

Luther Foster, recently agriculturist of the Wyoming college and station, has been elected president of the New Mexico college and director of the station.

A. T. Wiancko, a graduate of the Ontario Agricultural college, and recently experimentalist with the Standard Cattle Company, of Ames, Nebraska, has been appointed instructor in agriculture in the University of Nebraska, and assistant agriculturist of the station.

A soil physics laboratory has been installed in the Utah Agricultural college.

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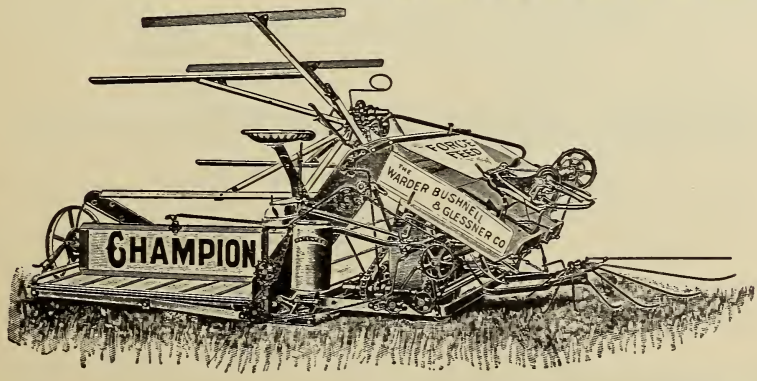
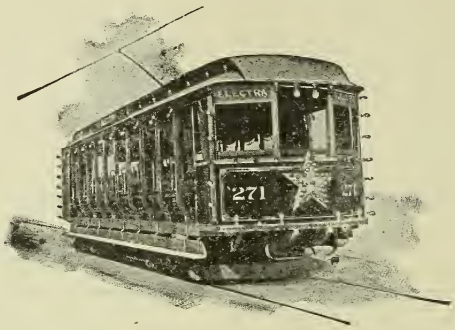


The Columbus Railway Co.

The Car Service Cannot be excelled by any Street Railway in a city of like population. All lines center in the heart of the city and extend in all directions to the suburbs.



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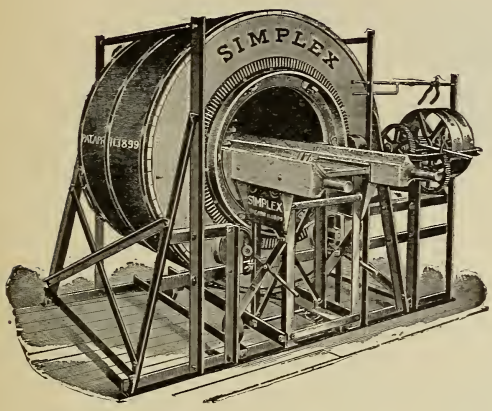

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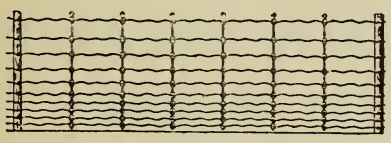

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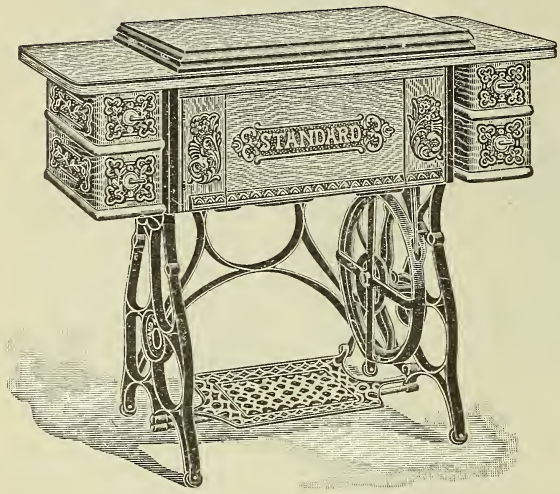

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